

**EDMONDSON vs. TYSON, et al.**  
**VALERIE J. HARWOOD**

**4:05-CV-00329**  
**1/29/08**

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IN THE UNITED STATES DISTRICT COURT FOR THE  
NORTHERN DISTRICT OF OKLAHOMA

W. A. DREW EDMONDSON, in his )  
capacity as ATTORNEY GENERAL )  
OF THE STATE OF OKLAHOMA and )  
OKLAHOMA SECRETARY OF THE )  
ENVIRONMENT C. MILES TOLBERT, )  
in his capacity as the )  
TRUSTEE FOR NATURAL RESOURCES )  
FOR THE STATE OF OKLAHOMA, )

Plaintiffs, )

vs. )

TYSON FOODS, INC., et al, )

Defendants. )

4:05-CV-00329-TCK-SAJ

- - - - -  
THE VIDEOTAPED DEPOSITION OF  
VALERIE J. HARWOOD, Ph.D., produced as a witness  
on behalf of the Defendants in the above styled and  
numbered cause, taken on the 29th day of January,  
2008, in the City of Tulsa, County of Tulsa, State  
of Oklahoma, before me, Bonnie Glidewell, a  
Certified Shorthand Reporter, duly certified under  
and by virtue of the laws of the State of Oklahoma.

**EDMONDSON vs. TYSON, et al.**  
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**A P P E A R A N C E S**

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16 ALSO APPEARING: Mr. Samuel Myoda  
17  
18  
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24  
25

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I N D E X	
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1 MR. WIETHOLTER: We are now on the record  
2 for the deposition of Ms. Valerie Harwood. Today is  
3 January 29th, 2008; the time is 8:03 a.m.

4 Would counsel please identify themselves for  
5 the record.

08:01AM

6 MR. PAGE: David Page representing the  
7 State of Oklahoma,

8 MR. BULLOCK: Louis Bullock for the State  
9 of Oklahoma.

10 MR. JORGENSEN: Jay Jorgenson for Tyson  
11 Foods.

08:01AM

12 MR. Todd: Gordon Todd for Tyson Foods.

13 MR. BASSETT: Woody Bassett for George's  
14 and George's Farms.

15 MR. SANDERS: Bob Sanders for the Cal-Maine  
16 defendants.

08:02AM

17 MS. LONGWELL: Nicole Longwell on behalf of  
18 Peterson Farms.

19 MR. WIETHOLTER: Thank you. The witness  
20 may be sworn in.

08:02AM

21  
22 VALERIE J. HARWOOD, Ph.D.  
23 having first been duly sworn to testify the truth,  
24 the whole truth and nothing but the truth, testified  
25 as follows:

08:02AM

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**24**

1 When you were retained in the matter in 2004, was it  
2 your understanding you would provide testimony in  
3 this matter?

4 **A** I was not retained in 2004.

5 **Q** Okay. In your mind, when you were retained? 08:24AM

6 **A** In my mind it was, going down the  
7 chronological trail that we've kind of mapped out,  
8 and again I'm sorry, I can't remember the dates but  
9 it would have been 2005.

10 **Q** Summer of 2005? 08:24AM

11 **A** Yeah.

12 **Q** When you were retained in summer of 2005, was  
13 it your understanding that you would provide  
14 testimony in the matter?

15 **A** I don't recall -- 08:25AM

16 **Q** Okay. So --

17 **A** -- we talked about testimony.

18 **Q** So you didn't know at the first if the State  
19 might want you to testify?

20 **A** I don't recall if I knew that or not. 08:25AM

21 **Q** At what point do you recall knowing that you  
22 were going to testify in the case?

23 **A** Well, definitely by the following year.

24 **Q** By summer 2006?

25 **A** Yes. 08:25AM

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1 your opinions?

2 **A** There could be, because when I would get  
3 stuff, I would basically plunk it in that folder.

4 **Q** And where would you get stuff?

5 **A** When we were -- when we would be analyzing 08:27AM  
6 data or perhaps sharing a paper from the literature  
7 that one of us had found that we thought was germane  
8 to the case, then sometimes it would be e-mailed.  
9 So that was a frequent means of communication for  
10 the group. 08:28AM

11 **Q** Okay. And when you say "the group" and "we"  
12 and "us," who is that?

13 **A** Generally I'm referring to David Page, Roger  
14 Olsen, Chris Teaf, myself and sometimes Jennifer  
15 Weidhaas and Tanzem MacBeth, who are both at 08:28AM  
16 North Winds Lab.

17 **Q** And you would get information from all these  
18 people?

19 **A** Yes.

20 **Q** Did you ever get information from any of the 08:28AM  
21 other State's lawyers, other than Mr. Page, I mean?

22 **A** Not that I recall.

23 **Q** And how did you know what your task was?

24 **A** I felt like my task was very closely defined  
25 in that I was -- my job is to analyze and interpret 08:28AM

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1 Q How did you know what the case was about,  
2 initially?

3 A Initially it was in conversations with David  
4 Page and Roger Olsen about the water quality in the  
5 IRW, which would have been, again, the first 08:30AM  
6 conversation in 2004, but then, again, a gap of -- I  
7 believe in 2004 -- and then the gap of a year or so.

8 Q And there had to be some defining of roles and  
9 responsibilities so that everybody didn't do  
10 everything. Did Mr. Page define those roles and 08:31AM  
11 responsibilities for you as well?

12 A The closest I can come to saying that is that  
13 I had a task breakdown that I provided to  
14 Motley Rice, so I suppose that's where my role was  
15 defined, the most closely. 08:31AM

16 Q Okay. And you don't direct the other experts,  
17 do you?

18 A I don't direct the other experts?

19 Q Let me state it another way. Strike that.  
20 Are there any other experts in this case that you 08:31AM  
21 direct?

22 MR. PAGE: I'll object to the form.

23 THE WITNESS: Can you clarify what you mean  
24 by "direct"?

25 Q (By Mr. Jorgenson) Yeah. Is there anyone in 08:31AM



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1 testing was actually completed and/or planned before  
2 I came on the case and so I did not direct all of  
3 the -- nearly all of the planning of the  
4 microbiological testing.

5 Q (By Mr. Jorgenson) Okay. 08:33AM

6 A The --

7 Q I'm sorry, I didn't mean to interrupt you. Go  
8 ahead?

9 A That's all right.

10 Q So when you came on to the case and a lot of 08:33AM  
11 testing had already been done, by whom had it been  
12 done?

13 A The laboratories that we had mentioned: EML,  
14 FoodProtech and the mystery laboratory.

15 Q Okay, and if you remember the mystery 08:33AM  
16 laboratory's name, let us know.

17 A (Nodding head up and down.)

18 Q All right, let me return to the documents you  
19 provided. Did you make my handwritten notes in the  
20 course of working on this case? 08:33AM

21 A I don't remember doing that. I don't make a  
22 lot of handwritten notes.

23 Q Do you send a lot of e-mail in the case?

24 A Yes.

25 Q Okay. I have -- did you preserve the e-mail 08:34AM



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1 Q Did you provide them to Mr. Page before?

2 A Yes -- well, I provided them to Motley Rice.

3 Q Okay. Who at Motley Rice?

4 A I believe I sent them to Liza Ward.

5 Q Liza Ward? 08:36AM

6 A Liza Ward, uh-huh.

7 Q Okay. Let me move to e-mails you received. I

8 have here a set of e-mails; let me just tell you so

9 that we're on the same page, where I got these.

10 Roger Olsen gave us some documents as well -- or, 08:36AM

11 rather, the plaintiff's lawyers gave us some

12 documents for Roger Olsen. Let me get this marked.

13 I think it will be Defendants' Exhibit 3.

14 Take a moment to look at those. Now, on these

15 two e-mails you are a recipient, but this isn't the 08:37AM

16 complete set of e-mails you've received in this

17 case, is it?

18 A No.

19 Q And you provided Mr. Page with a complete set

20 of the e-mails you received in the case? 08:37AM

21 MR. PAGE: Object to the form.

22 Q (By Mr. Jorgenson) Let me restate it. Did

23 you provide Mr. Page with a complete set of the

24 e-mails you received in this case?

25 A I provided e-mails, a set of e-mails, to 08:37AM

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1 Motley Rice, Liza Ward at Motley Rice.

2 Q And you could do so again if you needed to?

3 A Yes, I could.

4 Q Thank you. Did you engage in any

5 correspondence with plaintiff's counsel or with the 08:37AM

6 other experts other than e-mail? Written

7 correspondence. So I'm talking about sending

8 letters or notes.

9 A No.

10 Q Did you receive any letters or notes from 08:38AM

11 either of the other experts in the case or

12 plaintiff's counsel?

13 A Not that I remember.

14 Q Okay. And how about documents, and, again, to

15 clarify the question, did you receive any physical 08:38AM

16 documents, not electronic, any physical documents

17 from plaintiff's counsel or the other experts in the

18 case?

19 A Not that I remember, except things like

20 contracts. 08:38AM

21 Q Okay. Other than contracts, everything came

22 to you via e-mail?

23 A As far as I can recall, yes.

24 Q Okay. And you still have all those materials?

25 A Yes. 08:38AM

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1 Q And you provided them to Mr. Page? Or let me  
2 restate that.

3 A Motley Rice.

4 Q You provided those to Motley Rice?

5 A Uh-huh. 08:38AM

6 Q Okay. Did you generate any data in this case  
7 in your lab?

8 A No.

9 Q It was all provided by the other labs we've  
10 discussed? 08:39AM

11 A Correct.

12 Q Did you at some point create a lab book?

13 A No.

14 Q Did you review a lab book?

15 A No. 08:39AM

16 Q So you've never seen a lab book that was  
17 created by any of the other experts in this case or  
18 by plaintiff's counsel?

19 A Correct.

20 Q Okay. Going forward, let me make sure we're 08:39AM  
21 on the same page. When I say "the other experts in  
22 this case," I'm going to include the labs, the  
23 people at the labs, when I say did you receive  
24 anything from other experts in the case.

25 A You are including the lab? 08:39AM

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1 Q And what was the -- I see that you are drawing  
2 those numbers from an e-mail.

3 A Uh-huh.

4 Q Let's put an exhibit sticker on that, too,  
5 then I'll ask you about it. Can we do that. We 01:54PM  
6 need the e-mail and then the handwritten copy.

7 Tell us about the e-mail from which you are  
8 drawing these numbers.

9 A I was refreshing my memory yesterday on this  
10 report, and I came to this table and some numbers 01:54PM  
11 and it didn't make sense to me in terms of they  
12 couldn't be as low as they were and still make sense  
13 within the way that we did the analysis, and so  
14 that's when I we called Jennifer and said, "hey,  
15 take a look at this." 01:55PM

16 Q Okay. Did you check any of North Wind's other  
17 calculations?

18 A Yeah, we would have occasion to go through  
19 calculations and check them.

20 Q And did you personally check them? 01:55PM

21 A Did I personally check them? Sometimes yes.

22 Q Okay, and did you check all of them?

23 A No.

24 Q I believe we will go to Bates number 3001 in  
25 that document we have just now been talking about. 01:55PM

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1 Act?

2 **A** No.

3 **Q** Do you need some water?

4 **A** I'm good.

5 **Q** We can take a moment. 09:26AM

6 **A** Thanks, David.

7 MR. PAGE: Sure.

8 **Q** (By Mr. Jorgenson) So I believe we ended by  
9 saying that you had not looked at the Resource  
10 Conservation & Recovery Act, is that right? 09:26AM

11 **A** That's correct.

12 **Q** So you don't know if that act has a meaning, a  
13 legal meaning for the word, "waste"?

14 **A** Correct.

15 **Q** And you certainly, when you use the word 09:26AM  
16 "waste," you're not trying to imply such a legal  
17 meaning?

18 **A** Correct.

19 **Q** In that same paragraph, if you will read it,  
20 paragraph 4, you note that you were retained to 09:26AM  
21 provide expertise on several subjects. Can you tell  
22 us what those subjects are? I count three but I  
23 would like to have you count them.

24 **A** Yeah, any microbial contamination of water  
25 bodies, its possible consequences to human health 09:27AM

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1 and the major sources of microbial contamination to  
2 the IRW.

3 Q What do you mean by microbial contamination of  
4 water bodies?

5 A Microbial contamination of water bodies can 09:27AM  
6 occur by many routes, one of them would be by waste  
7 or excretions from animals entering the water body.  
8 And these would be unwanted bacteria that have  
9 consequences for human health.

10 Q And you say the major sources of microbial 09:27AM  
11 contamination to the IRW; what did you do to  
12 identify the major sources of contamination to the  
13 IRW?

14 A So microbial source tracking is my gauge or  
15 area of expertise, so we use a weight-of-evidence 09:27AM  
16 approach, where we gauge land use, we gauge  
17 measurements of other major components, sometimes  
18 chemical components; we, we look at GIS information,  
19 and we look at the density of populations of animals  
20 and humans in the watershed; we look at the 09:28AM  
21 hydrogeology of the area, and, and we look at  
22 proximal sources of contamination to these water  
23 bodies; and then, again using the source, this  
24 weight-of-evidence approach, judge what are the most  
25 probable sources of contamination. And we can use 09:28AM



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1 the indicator bacteria, the EPA-approved,  
2 EPA/Oklahoma State-approved indicator bacteria are  
3 indicators of general fecal contamination. And then  
4 we have the means that I mentioned before to infer  
5 possible sources of contamination, major sources of 09:28AM  
6 contamination to the water body, and then we can  
7 potentially use more specific markers that are  
8 associated with particular animals to bolster that  
9 weight-of-evidence approach.

10 **Q** And when you talk about the weight-of-evidence 09:29AM  
11 approach, what do you mean by weight of the  
12 evidence?

13 **A** So we don't rely on any one piece of  
14 information to draw conclusions. There are  
15 multiple, multiple lines of evidence that are 09:29AM  
16 weighed when drawing conclusions about what the  
17 dominant sources of contamination to a water body  
18 might be.

19 **Q** Why don't you rely on just one form of  
20 evidence? 09:29AM

21 **A** Because the factors that influence the fate of  
22 organisms, the transport of organisms, the shedding  
23 of organisms into water bodies are complex and,  
24 again, influenced by so many factors, that weighing  
25 one, one line of evidence can result in erroneous 09:29AM

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1       **A**       Did I have any contact with North Wind.

2       **Q**       Right.

3       **A**       Yes, I talked to, spoke with their laboratory  
4       personnel and managers.

5       **Q**       With whom at North Wind did you communicate                      01:17PM  
6       with by name?

7       **A**       Jennifer Weidhaas and Tamzen MacBeth.

8       **Q**       How frequently?

9       **A**       I would say about once a month on average.

10      **Q**       Did North Wind send you periodic updates as to                      01:17PM  
11      its work?

12      **A**       Yes, they did.

13      **Q**       How often?

14      **A**       There wasn't a scheduled timing. Again,  
15      sometimes it was frequent, a couple of times a week,                      01:18PM  
16      when things were developing and other times it might  
17      be two months between reports or communications.

18      **Q**       What form did their updates take?

19      **A**       They were e-mails, Word documents or spread  
20      sheets. Usually Word documents.    01:18PM

21      **Q**       And did -- Sorry, I didn't mean to interrupt.

22      **A**       And some spread sheets.

23      **Q**       Did North Wind ever send you drafts of its  
24      reports?

25      **A**       Yes.    01:18PM

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1 Q Did you comment on these and send them back?

2 A Yes.

3 Q Do you still have your communications back to  
4 them?

5 A My drafts? 01:18PM

6 Q Yeah. Or comments that you may have made on  
7 North Wind drafts.

8 A Usually I would purge incomplete or draft  
9 versions from my file so I don't get confused, so I  
10 don't usually save that sort of thing. 01:18PM

11 Q Okay. We should talk for a minute about what  
12 was purged. What was purged?

13 A I don't recall anything was purged. I know I  
14 did some --

15 Q Deleted, I'm sorry. I thought you just said 01:18PM  
16 that you typically would delete or purge some  
17 documents to make sure that you know you knew what  
18 the file version was.

19 A Oh, you mean what did I delete from my -- it  
20 would be certain levels of drafts that we had worked 01:19PM  
21 on.

22 Q How many would you say were deleted?

23 A I can't say. I don't know.

24 Q A dozen?

25 A No, I don't know. Drafts are drafts. They 01:19PM

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1 don't really mean much.

2 Q What kind of comments would you make in these  
3 drafts?

4 A I might ask a question like can you clarify  
5 here or I might say do you mean microgram or 01:19PM  
6 microliter or I might say can we put a figure in  
7 here so we can explain this better or I might say I  
8 don't understand this part; let's go through it,  
9 things like that.

10 Q All right. Let's move to the sampling 01:19PM  
11 protocol. So for your microbial source tracking  
12 work, is it true that various samples were taken?

13 A Yes, it's true.

14 Q Who participated in making the decision about  
15 what samples to take? 01:20PM

16 A That was -- it was Roger Olsen, David Page and  
17 I.

18 Q Who decided --

19 A Let me clarify something. The samples  
20 actually, when we first started -- okay, I'm not 01:20PM  
21 sure of the date, but at some point during the  
22 microbiological sampling we started keeping DNA  
23 samples, extracting them, keeping them aside in case  
24 we wanted to do something with them later on. So a  
25 lot of these sample were actually collected 01:20PM

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1 MR. TUCKER: John, go ahead.

2 MR. ELROD: I just have very few.

3

4 DIRECT EXAMINATION

5 BY MR. ELROD:

6 Q Doctor, my name is John Elrod, and I represent

7 Simmons Foods in the case. I want to return to this

8 issue of e-mail production. Can you quantify the

9 number of e-mails that you would have sent to the

10 attorney at Motley Rice that didn't find their way

03:24PM

11 to us?

12 A No, I can't. I'll have to go back and look.

13 Q Will you do that when you get home?

14 A Oh, yeah.

15 Q And you will report to Mr. Page?

03:24PM

16 A Sure.

17 Q Or you will send to Mr. Page -- can you send

18 to Mr. Page the actual total bulk of the e-mails

19 that you had sent previously to Motley Rice?

20 A Yeah, I can do that.

03:24PM

21 Q When will you be able to do that?

22 A I, I've got a crazy week. Monday is probably,

23 is Monday okay?

24 Q Yeah, Monday is fine. And can you send hard

25 copies? Can you make hard copies and send those

03:25PM

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1       instead of just sending them electronically?

2       **A**       Okay.

3       **Q**       What about any additional hard copy

4       information that you have sent to Motley Rice in

5       addition to over and above e-mails?

03:25PM

6       **A**       I really don't generally send hard copy, and

7       actually I've forgotten about those letters to Food

8       -- or about FoodProtech. I can't think of any hard

9       copies that I would have sent.

10      **Q**       What do you think the size or the bulk of hard

03:25PM

11      copies would be that we've not received that you

12      generated?

13               MR. PAGE: Object to the form.

14               THE WITNESS: Hard copies in terms of

15      e-mails you mean?

03:25PM

16      **Q**       (By Mr. Elrod) Anything. No, in addition to

17      e-mails.

18               MR. PAGE: Same objection.

19               THE WITNESS: None.

20      **Q**       (By Mr. Elrod) Your testimony is that you

03:26PM

21      have not retained hard copies of anything you have

22      not sent to us?

23               MR. PAGE: Same objection.

24               THE WITNESS: I am -- I cannot think of

25      any. I can go through my files and check but I

03:26PM

**EDMONDSON vs. TYSON, et al.  
VALERIE J. HARWOOD****4:05-CV-00329  
1/29/08****307**

1 the prevalence of disease, frequency of disease  
2 rates, overall, in the IRW.

3 Q Okay. Have you ever given testimony in court?

4 A No.

5 Q Okay. When did you first conclude that 04:00PM  
6 bacteria was in surface water, groundwater and the  
7 sediments in the IRW or the Illinois River  
8 watershed?

9 A In the indicator bacteria data. I believe we  
10 had that data back in 2005, definitely by 2006. 04:00PM

11 Q When did you first conclude the application of  
12 poultry litter in the Illinois River watershed  
13 should be stopped in order to address the bacterial  
14 problem?

15 A I worked on the case for -- I would say, a 04:00PM  
16 year before that, that was a firm conclusion in my  
17 mind, so it would have been 2006 I think.

18 Q When was the -- I'm sorry, I don't have that  
19 in front of me, but can you tell me, based on your  
20 recollection, when the testing for the biomarkers 04:01PM  
21 was completed?

22 A Well, the testing for the biomarkers is  
23 ongoing in field samples, but the -- this basic  
24 part, the validation, the development and validation  
25 part, was completed about October 2007. 04:01PM